The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TULIN KUZULUGIL HIDAYETOGLU

Appeal No. 2005-1488
Application 09/604,218

ON BRIEF

Before KIMLIN, PAK and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1-8, 11-15 and 20-23.

THE INVENTION

The appellant claims a clutch facing material containing a concentration gradient of heat conducting elements. Claim 11 is illustrative:

> 11. In a composite clutch facing material having opposed surfaces with one surface engaging a movable, engageable part, the improvement comprising heat conducting elements disposed in said composite clutch facing material in a selected arrangement and a varying concentration for transferring heat away from said engaging surface to a non-engaging surface, said varying concentration of said heat conducting elements decreasing in concentration from said first surface to said second non-engaging surface.

THE REFERENCES

Booher	5,156,787	Oct. 20, 1992
Miyamoto et al. (Miyamoto)	6,001,440	Dec. 14, 1999
Nakamoto et al. (Nakamoto)	6,098,612	Aug. 8, 2000
	(§ 102(e) date	Sep. 4, 1997)

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1-8, 11, 12, 20, 21 and 23 over Booher in view of Miyamoto, and claims 13-15 and 22 over Booher in view of Miyamoto and Nakamoto.[1]

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[1] A rejection of claim 5 under 35 U.S.C. § 112, second paragraph, is withdrawn in the examiner's answer (page 3).

OPINION

We reverse the aforementioned rejections.

Booher discloses a clutch friction pad comprising a thermoplastic or curable resin that contains reinforcing fibers and which can have, uniformly distributed therein, a heat conductive powder in an amount of, for example, about 1 to 3 wt%, to enhance the dissipation of heat (col. 2, line 28 - col. 3, line 3).

Miyamoto discloses a heat conductive polyimide film containing 10-30 wt% of a concentration gradient of heat conductive powder (col. 2, lines 16-18 and 57-63). The polyimide film generally has a thickness of about 20 to 300 μm and is useful in various rolls or belts for providing heating or heat dissipation, for example, in a roll or belt for toner heating and fixation in laser printers and electrophotographic copying machines, as a member of the heating and image transferring belt in ink replenishing type transfer printers, and in a roll for heating adhesives, and the film also is useful for heat dissipation in printed integrated circuit boards (col. 3, lines 30-34; col. 6, lines 18-31). When the face side of the film is used for heating an article it is desirable that the heat conductive powder concentration gradually increases from the

reverse side to the face side (col. 2, lines 46-50).

The examiner argues that Miyamoto discloses that the polyimide film having a concentration gradient of heat conductive powder unexpectedly has a thermal conductivity which is double that of a film having a uniform dispersion of heat conductive powder (answer, pages 6 and 10). What Miyamoto discloses is that the thermal conductivity of a polyimide film having a concentration gradient of heat conductive powder is double that of a polyimide film containing no heat conductive powder. As shown in table 1, the thermal conductivity of a polyimide film having a concentration gradient of heat conductive powder is 0.56 w/mk (example 1), whereas the thermal conductivity of a polyimide film containing no heat conductive powder is 0.29 w/mk (comparative example 3). The thermal conductivity of a polyimide film containing uniformly dispersed heat conductive powder is 0.60 w/mk (comparative example 1), which is slightly higher than that of the polyimide film having a concentration gradient of heat conductive powder. Thus, the examiner's argument that Miyamoto would have fairly suggested, to one of ordinary skill in the art, replacing Booher's uniform concentration of heat conductive powder with a concentration gradient of heat

conductive powder to obtain increased thermal conductivity is not well taken.

Miyamoto discloses that the concentration gradient of heat conductive powder in the polyimide film unexpectedly doubles the thermal conductivity of the film while having little effect on the film's mechanical characteristics (col. 7, lines 25-27). The disclosed mechanical characteristics are Young's modulus and stress cracking (table 1). The examiner has not established that one of ordinary skill in the art would have considered the mechanical characteristics referred to by Miyamoto to be desirable in Booher's clutch friction pad.

For the above reasons we conclude that the examiner has not carried the burden of establishing a *prima facie* case of obviousness of the appellant's claimed invention.[2]

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[2] The examiner does not rely upon Nakamoto for any disclosure that remedies the above-discussed deficiency in Booher and Miyamoto.

DECISION

The rejections under 35 U.S.C. § 103 of claims 1-8, 11, 12, 20, 21 and 23 over Booher in view of Miyamoto, and claims 13-15 and 22 over Booher in view of Miyamoto and Nakamoto, are reversed.

REVERSED

EDWARD C. KIMLIN)
Administrative Patent Judge)
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)
CHUNG K. PAK)
Administrative Patent Judge) BOARD OF PATENT
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